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| EXAMINER |
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

PTOL-90A (Rev. 04/07)

| | Application No. | Applicant(s) |
|---|---|---|
| **Office Action Summary** | 10/566,043 | MATSUI ET AL. |
| | Examiner | Art Unit | |
| | STEPHEN A. BRAY | 2629 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on _29 June 2010_.

2a)☒ This action is **FINAL**.      2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) _1-19_ is/are pending in the application.

     4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _1-19_ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

     a)☐ All    b)☐ Some *   c)☐ None of:

         1.☐ Certified copies of the priority documents have been received.

         2.☐ Certified copies of the priority documents have been received in Application No. _____.

         3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

     * See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08)
     Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
     Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

## DETAILED ACTION

In an amendment dated, 6/29/2010, the Applicant amended Claims 1, 18-19.

Currently claims 1-19 are pending.

## Response to Arguments

1.      Applicant's arguments, see Pages 1-12 of the Applicant's arguments, filed

6/29/2010, with respect to the rejection(s) of claim(s) 1 and 18-19 under 35 USC 103(a)

have been fully considered and are persuasive.  Therefore, the rejection has been

withdrawn.  However, upon further consideration, a new ground(s) of rejection is made

in view of Goldenberg et al (US 6,636,197) and Fitzmaurice et al (US 5,973,669) and

Mukai et al (US 2002/0158851).  *Goldenberg et al* discloses in Column 6 having a knob

26 for generating inputs along the x-axis, y-axis, and z-axis.  Column 4, line 32 through

Column 5, line 20 of *Fitzmaurice et al* discloses having a calculating unit and a judging

unit for determining an amount of angular change between two user inputs and

determining if the amount of angular change falls within a certain range.  Figures 1-2 of

*Mukai et al* disclose receiving user inputs and determining whether a first process or a

second process is to be performed based upon the received user inputs and the results

received from Input Judging Section 108.  Therefore Goldenberg et al in view of

Fitzmaurice et al and Mukai et al teach the subject matter of independent claims 1, 18,

and 19.

## *Claim Rejections - 35 USC § 101*

1.       35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claim 18 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. When examining a claim, the Examiner is to give each claim its broadest reasonable interpretation. Claim 18 discloses a program for use by a computer, without being embodied in a computer-readable media. As such, it is considered to be functional descriptive material, which is considered to be non-statutory subject matter, see MPEP 2106.01. Therefore Claim 18 stands rejected under 35 USC 101.

Claim 19 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. When examining a claim, the Examiner is to give each claim its broadest reasonable interpretation. Claim 19 discloses a computer-readable medium having a program stored therein. Page 20, lines 11-16, Page 22, lines 9-18, and Page 68, lines 15-20 of the Applicant's disclosure all contain references to the types of computer-readable medium available to be used. However, the passages listed above do not limit the term computer-readable medium to only non-transitory storage means. A non-transitory storage means is considered to be statutory subject matter under 35 USC 101, while a transitory storage means is considered to be non-statutory subject matter. Since the above claim is being given its broadest reasonable

interpretation and the specification is silent as to what extent the computer-readable

medium extends to, it is possible that said computer-readable medium can also include

transitory storage mediums, i.e. signals, which are non- statutory under 35 USC 101

.Therefore the Examiner suggests amending line 1 of claim 19 by adding the word "non-

transitory" before the phrase "computer-readable medium" to render claim 19 statutory.

This should not raise the issue of new matter, even if the specification is silent because

the broadest reasonable interpretation relies on the ordinary and customary meaning

that includes signals per se.  However, if the Applicant doesn't wish to add the above

wording to the claim 12, the Applicant may amend the specification as to ensure that

only statutory computer-readable mediums are defined in the specification as long as no

new matter is entered.


### *Claim Rejections - 35 USC § 103*

2.      This application currently names joint inventors.  In considering patentability of

the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of

the various claims was commonly owned at the time any inventions covered therein

were made absent any evidence to the contrary.  Applicant is advised of the obligation

under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was

not commonly owned at the time a later invention was made in order for the examiner to

consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g)

prior art under 35 U.S.C. 103(a).

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3.      Claims 1-2, 7, and 17-19 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Goldenberg et al (US 6,636,197) in view of Fitzmaurice et al (US

5,973,669) and Mukai et al (US 2002/0158851).

**Regarding claim 1**, *Goldenberg et al* discloses a user interface system

comprising:

a directional input unit having an operating member usable to make a directional

input and unusable to make a rotational input by a user, the directional input unit being

operable to receive at a point in time an input specifying one of at least three different

directions, in response to a user operation of touching the operating member (Figure 1

and Column 6, lines 1-55 of *Goldenberg et al* disclose having a knob 26 which is

moveable in the x-axis, y-axis, and z-axis directions.);


*Goldenberg et al* fails to teach a calculating unit operable to calculate an amount

of change from a first direction to a second direction, when the directional input unit

receives an input specifying the first direction followed within a predetermined time

period by an input specifying the second direction;

a judging unit operable to judge whether the calculated amount of change falls

within a predetermined range; and

Fitzmaurice et al discloses a calculating unit operable to calculate an amount of change from a first direction to a second direction, when the directional input unit receives an input specifying the first direction followed within a predetermined time period by an input specifying the second direction (Figures 5a-5e and Column 4, lines 32-57 of Fitzmaurice et al discloses calculating the amount of change between a reference position and a subsequent position.);

a judging unit operable to judge whether the calculated amount of change falls within a predetermined range (Column 4, line 58 through Column 5, line 20 of Fitzmaurice et al discloses judging if the calculated amount of change is between x and y degrees, or w and z degrees, i.e. falls within a predetermined range.).

Therefor it would have been obvious to one of ordinary skill in the art at the time that the invention was made to modify the input device taught by Goldenberg et al with the teachings of Fitzmaurice et al in order to form an input device in which control of video images being displayed can more easily be performed.


Goldenberg et al as modified above fails to teach a processing unit operable to perform a first process associated with each of the first and second directions when the judging unit judges negatively, and perform a second process associated with the amount of change when the judging unit judges affirmatively.

Mukai et al discloses a processing unit operable to perform a first process associated with each of the first and second directions when the judging unit judges negatively, and perform a second process associated with the amount of change when

the judging unit judges affirmatively (Figures 1-2 of *Mukai et al* disclose receiving user

inputs and determining whether a first process or a second process is to be performed

based upon the received user inputs and the results received from Input Judging

Section 108.).

Therefor it would have been obvious to one of ordinary skill in the art at the time

that the invention was made to modify the input device taught by *Goldenberg et al* with

the teachings of *Mukai et al* in order to form an input device in which it is easier to

determine whether to perform a first operation or a second operation is desired to be

performed by the user.


**Regarding claim 2**, *Goldenberg et al* as modified above discloses the user

interface system according to Claim I, wherein

when the input specifying the first direction is followed within the predetermined

time period by two or more inputs specifying directions different from the first direction,

the calculating unit calculates the amount of change from the first to second directions

which are specified respectively by the inputs received first and last within the

predetermined time period (Figures 5a – 5e and Column 4, line 32 through Column 5,

line 20 of *Fitzmaurice et al* discloses receiving a first input and a second input and

determining the amount of change between the first input and the second input.).


**Regarding claim 7**, *Goldenberg et al* as modified above discloses the user

interface system according to claim 1, wherein

when the input specifying the first direction is followed within the predetermined

time period by no input specifying another direction, the processing unit performs a first

process associated with the first direction (Column 6 of *Goldenberg et al* discloses that

when an input is made in any one of direction 32, a process is performed in accordance

with the currently selected mode of the electronic device.).


**Regarding claim 17**, *Goldenberg et al* as modified above discloses the user

interface system according to claim 1, further comprising:

a display unit operable to display an image of a vinyl record (Column 4, lines 21-

39 of *Goldenberg et al* discloses that the controlled device can be used to control video

games. Column 4, lines 47-50 of *Goldenberg et al* discloses that a display 14 is

coupled to control panel 12.);

a storage unit operable to store a first table and a second table, the first table

associating the individual directions with sounds, and the second table associating the

individual amounts of change with scratch sounds (Figure 3 of *Goldenberg et al*

discloses having a memory 206 for performing operations according to inputs made by

the knob 26. Column 4, line 58 through Column 5, line 20 of *Fitzmaurice et al* discloses

associating the calculated amount of change, i.e. the amount of change is between x

and y degrees, or w and z degrees, with a predetermined control command.); and

an output unit operable to produce audio output (Column 6, lines 23-31 of

*Goldenberg et al* discloses that control 12 can be used to adjust the volume. Therefore

the control device would also have access to an audio output device.).

when the judging unit judges negatively, the processing unit refers to the first

table to accordingly perform the first processes, so that the output unit produces a

sound associated with each direction input to the directional input unit (Paragraph

[0040] – [0043] and Figures 3-5 of *Tsuk et al* disclose performing the normal scroll

process when the amount of rotational movement is less than a given amount.), and

when the judging unit judges affirmatively, the processing unit refers to the

second table to accordingly perform the second process, so that the output unit

produces a scratch sound associated with the calculated amount of change (Paragraph

[0043] of *Tsuk et al* discloses performing an accelerated scroll function when the

amount of rotational movement is determined to be greater than a predetermined

amount.).


**Regarding claim 18**, *Goldenberg et al* as modified above discloses a program

for use by a computer having a directional input unit that includes an operating member

usable to make a directional input and unusable to make a rotational input by a user

and that is operable to receive at a point in time an input specifying one of at least three

directions in response to a user operation of touching the operating member (Figure 1

and Column 6, lines 1-55 of *Goldenberg et al* disclose having a knob 26 which is

moveable in the x-axis, y-axis, and z-axis directions.), the program comprising code

operable to cause the computer to perform:

a calculating step of calculating an amount of change from a first direction to a

second direction, when the directional input unit receives an input specifying the first

direction followed within a predetermined time period by an input specifying the second

direction (Figures 5a-5e and Column 4, lines 32-57 of *Fitzmaurice et al* discloses

calculating the amount of rotation between a reference position and a subsequent

position.);

a judging step of judging whether the calculated amount of change falls within a

predetermined range (Column 4, line 58 through Column 5, line 20 of *Fitzmaurice et al*

discloses judging if the calculated amount of change is between x and y degrees, or w

and z degrees, i.e. falls within a predetermined range.); and

a step of performing a first process associated with each of the first and second

directions when the judging unit judges negatively, and performing a second process

associated with the amount of change when the judging unit judges affirmatively

(Figures 1-2 of *Mukai et al* disclose receiving user inputs and determining whether a first

process or a second process is to be performed based upon the received user inputs

and the results received from Input Judging Section 108.).


**Regarding claim 19**, *Goldenberg et al* as modified above discloses a computer-

readable medium storing a program for use by a computer having a directional input

unit that includes an operating member usable to make a directional input and unusable

to make a rotational input by a user and that is operable to receive at a point in time an

input specifying one of at least three directions in response to a user operation of

touching the operating member (Figure 1 and Column 6, lines 1-55 of *Goldenberg et al*

disclose having a knob 26 which is moveable in the x-axis, y-axis, and z-axis directions.), the program comprising code operable to cause the computer to perform:

a calculating step of calculating an amount of change from a first direction to a second direction, when the directional input unit receives an input specifying the first direction followed within a predetermined time period by an input specifying the second direction (Figures 5a-5e and Column 4, lines 32-57 of *Fitzmaurice et al* discloses calculating the amount of rotation between a reference position and a subsequent position.);

a judging step of judging whether the calculated amount of change falls within a predetermined range (Column 4, line 58 through Column 5, line 20 of *Fitzmaurice et al* discloses judging if the calculated amount of change is between x and y degrees, or w and z degrees, i.e. falls within a predetermined range.); and

a step of performing a first process associated with each of the first and second directions when the judging unit judges negatively, and performing a second process associated with the amount of change when the judging unit judges affirmatively (Figures 1-2 of *Mukai et al* disclose receiving user inputs and determining whether a first process or a second process is to be performed based upon the received user inputs and the results received from Input Judging Section 108.).

4.      Claims 3-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Goldenberg et al (US 6,636,197) in view of Fitzmaurice et al (US 5,973,669) and Mukai

et al (US 2002/0158851) as applied to claim 1 above, and further in view of Trent, Jr. et

al (US 7,466,307).

**Regarding claim 3**, *Goldenberg et al* as modified above discloses the user

interface system according to claim 1.

*Goldenberg et al* as modified above fails to teach wherein one of the directions

available for an input to the operating member is a reference direction and each of the

directions is expressed by an angle formed with the reference direction, and

the calculating unit calculates an amount of angular change from a first angle

expressing the first direction to a second angle expressing the second direction, when

the directional input unit receives the input specifying the first direction followed within

the predetermined time period by the input specifying the second direction.

*Trent, Jr. et al* discloses wherein one of the directions available for an input to the

operating member is a reference direction and each of the directions is expressed by an

angle formed with the reference direction (Figure 44 and Column 19, lines 10-40 of

*Trent, Jr. et al* disclose that each position is calculated with respect to a reference

direction.), and

the calculating unit calculates an amount of angular change from a first angle

expressing the first direction to a second angle expressing the second direction, when

the directional input unit receives the input specifying the first direction followed within

the predetermined time period by the input specifying the second direction (Figure 44

and Column 19, lines 10-40 of *Trent, Jr. et al* discloses determining the amount of

angular change from the first direction to the second direction by subtracting the first

position from the second position.).

Therefore it would have been obvious to one of ordinary skill in the art at the time

that the invention was made to further modify the input apparatus taught by *Goldenberg*

*et al* with the teachings of *Trent, Jr. et al* in order to form an input apparatus in which

angular motion on the input apparatus can be determined with greater ease.


**Regarding claim 4**, *Goldenberg et al* as modified above discloses the user

interface system according to claim 3, wherein

each of the directions available for an input to the operating member is

expressed by 360° with respect to the reference direction at 0°, and the predetermined

range is 10°<|amount of angular change|<160° (Figure 1 of *Goldenberg et al* discloses

the operating member can be moved in 8 possible directions.  Therefore the minimum

amount of change available to be made by the input member of *Goldenberg et al* would

be 360° divided by 8, which is 45°.  Figure 44 and Column 19, lines 10-40 of *Trent, Jr.*

*et al* discloses determining the direction of angular input by assuming that the user

cannot travel more than 180° within the predetermined time period.  Therefore

*Goldenberg et al* and *Trent, Jr. et al* in combination teach the predetermined range

listed above.).


5.      Claims 5-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Goldenberg et al (US 6,636,197) in view of Fitzmaurice et al (US 5,973,669) and Mukai

et al (US 2002/0158851) as applied to claim 1 above, and further in view of Masudaya

(US 2001/0040562).

**Regarding claim 5**, *Goldenberg et al* as modified above discloses the user

interface system according to claim 1.

*Goldenberg et al* as modified above fails to teach a determining unit operable to

determine, when the judging unit judges affirmatively and a process most recently

performed is a first process, a second process as a candidate process to be performed ;

and

a counting unit operable to keep count of how many times the determination is

made, wherein

when the determination count reaches a predetermined number, the processing

unit performs second processes associated with the respective amounts of angular

change having been calculated for making the determination.

*Masudaya* discloses a determining unit operable to determine, when the judging

unit judges affirmatively and a process most recently performed is a first process, a

second process as a candidate process to be performed (Figures 4-6 of *Masudaya*

disclose determining if erroneous inputs are being made by the user, determining there

is an erroneous input when the most recent input by the user occurs less than T amount

of time after the prior input, i.e. the user quickly correcting an incorrect input.); and

a counting unit operable to keep count of how many times the determination is

made (Figures 4-6 of *Masudaya* disclose having a counting unit for keeping track of the

number of erroneous inputs that have occurred for a given input.), wherein

when the determination count reaches a predetermined number, the processing

unit performs second processes associated with the respective amounts of angular

change having been calculated for making the determination (Figures 4-6 of *Masudaya*

disclose that when the count reaches a specified number, performing an automatic

reassignment of the input buttons in accordance with the erroneous inputs.).

Therefore it would have been obvious to one of ordinary skill in the art at the time

that the invention was made to further modify the input apparatus taught by *Goldenberg*

*et al* with the teachings of *Trent, Jr. et al* in order to form an input apparatus in which

erroneous inputs by the user can be reduced.


**Regarding claim 6**, *Goldenberg et al* as modified above discloses the user

interface system according to claim 1, further comprising:

a determining unit operable to determine, when the judging unit judges negatively

and when a process most recently performed is a second process, a first process as a

candidate process to be performed (Figures 4-6 of *Masudaya* disclose determining if

erroneous inputs are being made by the user, determining there is an erroneous input

when the most recent input by the user occurs less than T amount of time after the prior

input, i.e. the user quickly correcting an incorrect input.); and

a counting unit operable to keep count of how many times the determination is

made (Figures 4-6 of *Masudaya* disclose having a counting unit for keeping track of the

number of erroneous inputs that have occurred for a given input.), wherein

when the determination count reaches a predetermined number, the processing

unit performs first processes associated with the respective directions having been

received for making the determination (Figures 4-6 of *Masudaya* disclose that when the

count reaches a specified number, performing an automatic reassignment of the input

buttons in accordance with the erroneous inputs.).

6.      Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over

Goldenberg et al (US 6,636,197) in view of Fitzmaurice et al (US 5,973,669) and Mukai

et al (US 2002/0158851) as applied to claim 1 above, and further in view of Inoue et al

(US 2003/0085793).

**Regarding claim 8**, *Goldenberg et al* as modified above discloses the user

interface system according to claim 1.

*Goldenberg et al* as modified above fails to teach wherein the directional input

unit includes:

a resistive layer formed on an insulating substrate;

a conducting member formed on a planar substrate facing the resistive layer

across a predetermined insulating gap; and

the operating member used to bring the resistive layer partially into contact with

the conducting member, wherein

in response to a user operation of touching the operating member under a

condition where a predetermined voltage is applied to the resistive layer, the insulating

substrate and the planar substrate are brought partially into contact, so that an input

specifying a direction is received based on a voltage conducted as a result of the partial

contact.

Inoue et al discloses wherein the directional input unit includes:

a resistive layer formed on an insulating substrate (Paragraph [0056] discloses

that resistive layer 18 is printed on a flexible insulating substrate 16.);

a conducting member formed on a planar substrate facing the resistive layer

across a predetermined insulating gap (Paragraph [0056] discloses that conducting

layers 22 and 23 are disposed on printed circuit substrate 13 and separated from

resistive layer 18 by insulating spacers 16B.); and

the operating member used to bring the resistive layer partially into contact with

the conducting member (Figures 4-5 and Paragraph [0056] disclose that knob 14 is

used to bring the resistive layer 18 into contact with conductive layers 22 and 23.),

wherein

in response to a user operation of touching the operating member under a

condition where a predetermined voltage is applied to the resistive layer, the insulating

substrate and the planar substrate are brought partially into contact, so that an input

specifying a direction is received based on a voltage conducted as a result of the partial

contact (Paragraph [059] – [0060] discloses that a predetermined DC voltage is applied

to the resistive layer 18.  When resistive layer 18 is brought into contact with conductive

layers 22 and 23, an output voltage VI is generated that specifies where on the input

unit the touch has occurred.).

Therefore it would have been obvious to one of ordinary skill in the art at the time
that the invention was made to further modify the input apparatus taught by *Goldenberg
et al* with the teachings of *Inoue et al* in order to form an input apparatus which can be
made smaller without compromising the resolution of the input apparatus.


7.      Claims 9, 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over
Goldenberg et al (US 6,636,197) in view of Fitzmaurice et al (US 5,973,669) and Mukai
et al (US 2002/0158851) as applied to claim 1 above, and further in view of Nguyen (US
7,036,091).

**Regarding claim 9**, *Goldenberg et al* as modified above discloses the user
interface system according to claim 1, further comprising:

a storage unit operable to store a first table and a second table, the first table
associating the individual directions with the options, and the second table associating
the individual amounts of change with movement directions and amounts of the
selected position (Figure 3 of *Goldenberg et al* discloses having a memory 206 for
performing operations according to inputs made by the knob 26. Column 4, line 58
through Column 5, line 20 of *Fitzmaurice et al* discloses associating the calculated
amount of change, i.e. the amount of change is between x and y degrees, or w and z
degrees, with a predetermined control command.), wherein

when the judging unit judges negatively, the processing unit refers to the first
table to accordingly perform the first process, so that an option associated with each
direction input to the directional input unit is focused or selected (Figures 1-2 of *Mukai et*

*al* disclose receiving user inputs and performing a first process or a second process

based upon the received user inputs and the results received from Input Judging

Section 108.), and

when the judging unit judges affirmatively, the processing unit refers to the

second table to accordingly perform the second process, so that the selected position is

moved in a movement direction and amount associated with the calculated amount of

change (Figures 1-2 of *Mukai et al* disclose receiving user inputs and performing a first

process or a second process based upon the received user inputs and the results

received from Input Judging Section 108.).


*Goldenberg et al* as modified above fails to teach a display unit operable to

display (i) a group of options in an annular array, and (ii) a selected position movable to

any of the options to indicate that the option is currently focused or selected; and

*Nguyen* discloses a display unit operable to display (i) a group of options in an

annular array, and (ii) a selected position movable to any of the options to indicate that

the option is currently focused or selected (Figure 4 shows a display 104 with a group of

options 424 and an indicator 428 which indicates which option is currently selected.);

and

Therefore it would have been obvious to one of ordinary skill in the art at the time

that the invention was made to further modify the input apparatus taught by *Goldenberg*

*et al* with the teachings of *Nguyen* in order to form an input apparatus in which all the

characters available for selection are displayed upon the display device.

**Regarding claim 11**, *Goldenberg et al* as modified above discloses the user

interface system according to claim 1, further comprising:

a display unit operable to display an image of a dial on which a group of letters

are arranged in an annular array selected (Figure 4 of *Nguyen* shows a display 104 with

a group of options 424 and an indicator 428 which indicates which option is currently

selected.); and

a storage unit operable to store a table associating the individual amounts of

change with rotational directions and amounts of the dial (Figure 3 of *Goldenberg et al*

discloses having a memory 206 for performing operations according to inputs made by

the knob 26.  Column 4, line 58 through Column 5, line 20 of *Fitzmaurice et al* discloses

associating the calculated amount of change, i.e. the amount of change is between x

and y degrees, or w and z degrees, with a predetermined control command.), wherein

when the judging unit judges negatively, the processing unit performs the first

process, so that each input to the directional input unit is discarded and causes no text

input (Figures 1-2 of *Mukai et al* disclose receiving user inputs and performing a first

process or a second process based upon the received user inputs and the results

received from Input Judging Section 108.), and

when the judging unit judges affirmatively, the processing unit refers to the table

to accordingly perform the second process, so that the dial is rotated in a rotational

direction and amount associated with the calculated amount of change and that text of a

letter placed at a predetermined position as a result of the rotation is input (Figures 1-2

of *Mukai et al* disclose receiving user inputs and performing a first process or a second

process based upon the received user inputs and the results received from Input

Judging Section 108.).


8.      Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over

Goldenberg et al (US 6,636,197) in view of Fitzmaurice et al (US 5,973,669) and Mukai

et al (US 2002/0158851) as applied to claim 1 above, and further in view of Duarte (US

2003/0043206).

        **Regarding claim 10**, *Goldenberg et al* as modified above discloses the user

interface system according to claim 1, further comprising:

        a storage unit operable to store a first table and a second table, the first table

associating the individual directions with the files, and the second table associating the

individual amounts of change with movement directions and amounts of a selected one

of the files (Figure 3 of *Goldenberg et al* discloses having a memory 206 for performing

operations according to inputs made by the knob 26.  Column 4, line 58 through Column

5, line 20 of *Fitzmaurice et al* discloses associating the calculated amount of change,

i.e. the amount of change is between x and y degrees, or w and z degrees, with a

predetermined control command.), wherein

        when the judging unit judges negatively, the processing unit refers to the first

table to accordingly perform the first process, so that a file associated with each

direction input to the directional input unit is selected (Figures 1-2 of *Mukai et al* disclose

receiving user inputs and performing a first process or a second process based upon

the received user inputs and the results received from Input Judging Section 108.), and

when the judging unit judges affirmatively, the processing unit refers to the

second table to accordingly perform the second process, so that a currently selected file

is moved in a movement direction and amount associated with the calculated amount of

change and placed into a folder if the selected file is moved to where the folder is

located change (Figures 1-2 of *Mukai et al* disclose receiving user inputs and

performing a first process or a second process based upon the received user inputs and

the results received from Input Judging Section 108.).


*Goldenberg et al* as modified above fails to teach a display unit operable to

display a plurality of files and folders in an annular array; and

*Duarte* discloses a display unit operable to display a plurality of files and folders

in an annular array (Figure 1 discloses arranging a plurality of files and folders in an

annular array.).

Therefore it would have been obvious to one of ordinary skill in the art at the time

that the invention was made to further modify the input apparatus taught by *Goldenberg*

*et al* with the teachings of *Duarte* in order to form an input apparatus in which it is easier

to view all of the options available for selection.


9.      Claims 12-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Goldenberg et al (US 6,636,197) in view of Fitzmaurice et al (US 5,973,669) and Mukai

et al (US 2002/0158851) as applied to claim 1 above, and further in view of Robbin et al

(US 2003/0095096).

**Regarding claim 12**, *Goldenberg et al* as modified above discloses the user

interface system according to claim 1, further comprising:

a storage unit operable to store a first table and a second table, the first table

associating the individual directions with processes to be performed, and the second

table associating the individual amounts of change with levels of audio output of content

targeted for playback ((Figure 3 of *Goldenberg et al* discloses having a memory 206 for

performing operations according to inputs made by the knob 26. Column 4, line 58

through Column 5, line 20 of *Fitzmaurice et al* discloses associating the calculated

amount of change, i.e. the amount of change is between x and y degrees, or w and z

degrees, with a predetermined control command.), wherein

when the judging unit judges negatively, the processing unit refers to the first

table to accordingly perform the first process associated with each direction input to the

directional input unit (Figures 1-2 of *Mukai et al* disclose receiving user inputs and

performing a first process or a second process based upon the received user inputs and

the results received from Input Judging Section 108.), and

when the judging unit judges affirmatively, the processing unit refers to the

second table to accordingly perform the second process, so that the content is played

with audio output at a level associated with the calculated amount of change (Figures 1-

2 of *Mukai et al* disclose receiving user inputs and performing a first process or a

second process based upon the received user inputs and the results received from

Input Judging Section 108.).

*Goldenberg et al* as modified above fails to teach a playback unit operable to

play content with audio; and

the second table associating the individual amounts of change with levels of

audio output of content targeted for playback.

*Robbin et al* discloses a playback unit operable to play content with audio (Figure

1B discloses a media player 100.); and

the second table associating the individual amounts of change with levels of

audio output of content targeted for playback (Paragraph [0051] discloses that rotational

movement can be used to make a volume adjustment.).

Therefore it would have been obvious to one of ordinary skill in the art at the time

that the invention was made to modify the input apparatus taught by *Goldenberg et al*

with the teachings of *Robbin et al* in order to form an input apparatus which realizes a

greater ease of use of computing devices.

**Regarding claim 13**, *Goldenberg et al* as modified above discloses the user

interface system according to claim 1, further comprising:

a playback unit operable to play content (Figure 1B of *Robbin et al* discloses a

media player 100.); and

a storage unit operable to store a first table and a second table, the first table

associating the individual directions with processes to be performed, and the second

table associating the individual amounts of change with speeds at which content

targeted for playback is fast-forwarded or rewound (Figure 3 of *Goldenberg et al*

discloses having a memory 206 for performing operations according to inputs made by

the knob 26. Column 4, line 58 through Column 5, line 20 of *Fitzmaurice et al* discloses

associating the calculated amount of change, i.e. the amount of change is between x

and y degrees, or w and z degrees, with a predetermined control command.), wherein

when the judging unit judges negatively, the processing unit refers to the first

table to accordingly perform the first process associated with each direction input to the

directional input unit (Figures 1-2 of *Mukai et al* disclose receiving user inputs and

performing a first process or a second process based upon the received user inputs and

the results received from Input Judging Section 108.), and

when the judging unit judges affirmatively, the processing unit refers to the

second table to accordingly perform the second process, so that the content is fast-

forwarded or rewound at a speed associated with the calculated amount of change

(Figures 1-2 of *Mukai et al* disclose receiving user inputs and performing a first process

or a second process based upon the received user inputs and the results received from

Input Judging Section 108.).

10.    Claims 14-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Goldenberg et al (US 6,636,197) in view of Fitzmaurice et al (US 5,973,669) and Mukai

et al (US 2002/0158851) as applied to claim 1 above, and further in view of Yamaguchi

et al (US 6,710,771).

  **Regarding claim 14**, *Goldenberg et al* as modified above discloses the user

interface system according to claim 1, further comprising:

  a storage unit operable to store a first table and a second table, the first table

associating the individual directions with movement directions of the selected position,

and the second table associating the individual amounts of change with scaling factors

by which a displayed part of the chart is scaled up or down with the selected position as

a center (Figure 3 of *Goldenberg et al* discloses having a memory 206 for performing

operations according to inputs made by the knob 26.  Column 4, line 58 through Column

5, line 20 of *Fitzmaurice et al* discloses associating the calculated amount of change,

i.e. the amount of change is between x and y degrees, or w and z degrees, with a

predetermined control command.), wherein

  when the judging unit judges negatively, the processing unit refers to the first

table to accordingly perform the first process, so that the selected position is moved in a

movement direction associated with each direction input to the directional input unit

(Figures 1-2 of *Mukai et al* disclose receiving user inputs and performing a first process

or a second process based upon the received user inputs and the results received from

Input Judging Section 108.), and

  when the judging unit judges affirmatively, the processing unit refers to the

second table to accordingly perform the second process, so that a displayed part of the

chart is scaled up or down by a scaling factor associated with the calculated amount of

change (Figures 1-2 of *Mukai et al* disclose receiving user inputs and performing a first

process or a second process based upon the received user inputs and the results

received from Input Judging Section 108.).

*Goldenberg et al* as modified above fails to teach a display unit operable to

display (i) a chart composed of options in an array and (ii) a selected position movable

to any of the options to indicate the option is currently focused or selected.

*Yamaguchi et al* discloses a display unit operable to display (i) a chart composed

of options in an array and (ii) a selected position movable to any of the options to

indicate the option is currently focused or selected (Figure 27 discloses having a chart

full of options displayed on a display and means to select one of the options.); and

and the second table associating the individual amounts of change with scaling

factors by which a displayed part of the chart is scaled up or down with the selected

position as a center (Figure 27 discloses having a window 90 which discloses that by

using a circular input unit, the user can zoom in or zoom out on the selected chart.).

Therefore it would have been obvious to one of ordinary skill in the art at the time

that the invention was made to further modify the input apparatus taught by *Goldenberg*

*et al* with the teachings of *Yamaguchi et al* in order to form an input apparatus which

can perform desired processing operation in a rapid manner.

**Regarding claim 15**, *Goldenberg et al* as modified above discloses the user

interface system according to claim 1, further comprising:

a display unit operable to display a map and a cursor (Figure 28 of *Yamaguchi et al* discloses having a display with a map.); and

a storage unit operable to store a first table and a second table, the first table associating the individual directions with movement directions of the cursor on the map, and the second table associating the individual amounts of change with scaling factors by which a displayed part of the map is scaled up or down with the cursor as a center (Figure 3 of *Goldenberg et al* discloses having a memory 206 for performing operations according to inputs made by the knob 26. Column 4, line 58 through Column 5, line 20 of *Fitzmaurice et al* discloses associating the calculated amount of change, i.e. the amount of change is between x and y degrees, or w and z degrees, with a predetermined control command. Figure 28 of *Yamaguchi et al* discloses that changes in the scaling factors is associated with a circular input movement.), wherein

when the judging unit judges negatively, the processing unit refers to the first table to accordingly perform the first process, so that the cursor is moved in a movement direction associated with each direction input to the directional input unit (Figures 1-2 of *Mukai et al* disclose receiving user inputs and performing a first process or a second process based upon the received user inputs and the results received from Input Judging Section 108.), and

when the judging unit judges affirmatively, the processing unit refers to the second table to accordingly perform the second process, so that a displayed part of the map is scaled up or down by a scaling factor associated with the calculated amount of change (Figures 1-2 of *Mukai et al* disclose receiving user inputs and performing a first

process or a second process based upon the received user inputs and the results

received from Input Judging Section 108.  Figure 28 of *Yamaguchi et al* discloses that a

circular motion input is used to zoom in or out of displayed map.).


**11.**     Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over

Goldenberg et al (US 6,636,197) in view of Fitzmaurice et al (US 5,973,669) and Mukai

et al (US 2002/0158851) as applied to claim 1 above, and further in view of

SanGiovanni (US 2002/0101441).

**Regarding claim 16**, *Goldenberg et al* as modified above discloses the user

interface system according to claim 1, further comprising:

a storage unit operable to store a first table and a second table, the first table

associating the individual directions with the currently displayed options, and the second

table associating the individual amounts of change with numbers by which a ranking

range of the currently displayed options are to be shifted (Figure 3 of *Goldenberg et al*

discloses having a memory 206 for performing operations according to inputs made by

the knob 26.  Column 4, line 58 through Column 5, line 20 of *Fitzmaurice et al* discloses

associating the calculated amount of change, i.e. the amount of change is between x

and y degrees, or w and z degrees, with a predetermined control command.), wherein

when the judging unit judges negatively, the processing unit refers to the first

table to perform the first process, so that an option associated with each direction input

to the directional input unit is focused or selected (Figures 1-2 of *Mukai et al* disclose

receiving user inputs and performing a first process or a second process based upon

the received user inputs and the results received from Input Judging Section 108.), and

when the judging unit judges affirmatively, the processing unit refers to the

second table to perform the second process, so that another group of options is

displayed, said another group including consecutive options within a ranking range

shifted from the current ranking range by a number associated with the calculated

amount of change (Figures 1-2 of *Mukai et al* disclose receiving user inputs and

performing a first process or a second process based upon the received user inputs and

the results received from Input Judging Section 108.).


*Goldenberg et al* as modified above fails to teach a managing unit operable to

rank and manage a plurality of options;

a display unit operable to display a group of options in a spiral array, the group

including a predetermined number of options of consecutive ranks out of the plurality of

options managed by the managing unit.

*SanGiovanni* discloses a managing unit operable to rank and manage a plurality

of options (Figure 7A and paragraph [0070] discloses rotating the information elements

as shown in step 732 according to the user's preference.);

a display unit operable to display a group of options in a spiral array, the group

including a predetermined number of options of consecutive ranks out of the plurality of

options managed by the managing unit (Figure 5 discloses showing a plurality of

options in a spiral array.).

Therefore it would have been obvious to one of ordinary skill in the art at the time

that the invention was made to modify the input apparatus taught by *Goldenberg et al*

with the teachings of *SanGiovanni* in order to form an input apparatus which can be

used to control a computer with only one hand.


### *Conclusion*

12.     Applicant's amendment necessitated the new ground(s) of rejection presented in

this Office action.  Accordingly, **THIS ACTION IS MADE FINAL**.  See MPEP

§ 706.07(a).  Applicant is reminded of the extension of time policy as set forth in 37

CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action.  In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action.  In no event, however, will the statutory period for reply expire later

than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to STEPHEN A. BRAY whose telephone number is

(571)270-7124.  The examiner can normally be reached on Monday - Friday, 9:00 a.m. -

5:00 p.m., EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, AMR AWAD can be reached on (571)272-7764. The fax phone number for

the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

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system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


/STEPHEN A BRAY/
Examiner, Art Unit 2629

/Amr Awad/
Supervisory Patent Examiner, Art Unit 2629

1 October 2010